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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,107	10/10/2003	John H. Jenkins	133865	2757

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EXAMINER

RAMIREZ, JOHN FERNANDO

ART UNIT	PAPER NUMBER
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3737

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11/23/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/684,107	Applicant(s) JENKINS ET AL.	
	Examiner John F. Ramirez	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☐ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

Response to Arguments

After a careful review of applicant's remarks dated September 7, 2007, all necessary changes to the claims have been entered. Accordingly, claims 1-23 rejected under 35 U.S.C. 101 has been withdrawn. In addition, the examiner of record has acknowledged the drawings submitted on October 10, 2003 as accepted formal drawings.

Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

With respect to claims 1-23 rejected under 35 U.S.C. 112 second paragraph as being indefinite. Applicant alleges on pages 10 and 11 of the remarks, that claims 1, 12, 22 and 23 recites utilizing a **computer configured to "analyze the stored time-stamped physiologic data to determine times of a selected phase in the plurality of cardiac cycles"**.

With respect to claims 12 and 23, a recitation with respect to the manner in which an apparatus is intended to be employed does not impose any structural limitation upon the claimed apparatus which differentiates it from a prior art reference disclosing the structural limitations of the claim. In re Pearson, 494 F.2d 1399, 181 USPQ 641 (CCPA 1974); In re Yanush, 477 F.2d 958, 177 USPQ 705 (CCPA 1973); In re Finsterwalder, 436 F.2d 1028, 168 USPQ 530 (CCPA 1971); In re Casey, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) ; In re Otto, 312 F. 2d 937, 136 USPQ 458 (CCPA 1963) Ex parte Masham, 2 USPQ2d 1647 (BdPatApp & Inter 1987).

With respect to claims 1 and 22, all that is required to meet these limitations is a processor which could be programmed to perform the steps as recited in claims 1 and 22.

Finally, in response to applicant's argument with respect to claims 1-23 rejected under section 112, second paragraph. Applicant relies more specifically on the specifications at paragraph 24, lines 4-8 and paragraph 36, lines 1-4 to describe the subject matter of the invention. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Therefore, upon further consideration, the following office action is provided in order to expedite the prosecution of this application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 12, 22 and 23, it is unclear as to how is determine the times of a selected phase in the plurality of cardiac cycles, Therefore, it is also unclear as to how is align and average images corresponding to the selected phase across the plurality of cardiac cycles to produce a single frame of image data.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 8-12, and 19-23 are rejected under 35 U.S.C. 102(b) as being anticipated by J. Christiaens et al. *"ECG-Based Selection of Angiographic Images using DICOM Facilities"*.

J. Christiaens et al. discloses a method for analyzing stored frames of time-stamped x- ray imaging data and time-stamped physiologic data obtained during a study of a patient during a plurality of cardiac cycles, said imaging data comprising, data enhanced by injection of a contrast agent into the cardiovascular system of the patient; frames representative of a succession of images of the patient's heart; said method comprising utilizing a computer to: analyze the stored physiologic data to determine times of a selected phase in the plurality of cardiac cycles; select, in the plurality of cardiac cycles, stored images corresponding to the determined times of the selected phase; and align and average images corresponding to the selected phase across the plurality of cardiac cycles to produce a single representative frame of image data, wherein the physiologic data comprises ECG waveform data (see abstract, see sections:

Introduction, R-peak detection, the selection of the images, the display of the selected images.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-7, and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over J. Christiaens et al. *"ECG-Based Selection of Angiographic Images using DICOM Facilities"* in view of Manning et al. (US 6,501, 979), Ossmann et al. (US 2004/0092816).

J. Christiaens et al. discloses a method for analyzing stored frames of time-stamped imaging data and time-stamped physiologic data obtained during a study of a patient during a plurality of cardiac cycles, except for mentioning specifically the steps of determining both a systolic volume and a diastolic volume, and determining an ejection fraction. However, a method for analyzing time-stamped physiologic data obtained during a plurality of cardiac cycles utilizing a computer to filter non-left ventricle anatomy from the single representative frame of image data, to detect edges of a left ventricle wall in the filtered, to determine both a systolic volume and a diastolic volume, and

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determining an ejection fraction, are conventional in the art as evidenced by the teachings of Manning et al. (US 6,501, 979), Ossmann et al. (US 2004/0092816).

Based on the above observations, for a person of ordinary skill in the art, modifying J. Christiaens et al. with a computer to filter non-left ventricle anatomy from the single representative frame of image data, to detect edges of a left ventricle wall in the filtered, to determine both a systolic volume and a diastolic volume, and determining an ejection fraction, would have been considered obvious in view of the proven conventionality of these enhancements.

With respect to claims 2 and 3, J. Christiaens et al. discloses a complete recording session of an angiographic sequence including images of the left ventricle in which each angiographic sequence contains an image sequence and a simultaneously recorded ECG sequence. In this way, the sequences and ECG signals are filtered to detect R-peaks during the recording of the sequence for display (see figures 2, 6, 7 and related description). Therefore, it would have been obvious to one having an ordinary skill in the art at the time of the invention was made to apply the above enhancements to J. Christiaens' method to derive the claimed invention.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John F. Ramirez whose telephone number is (571) 272-8685. The examiner can normally be reached on (Mon-Fri) 7:00 - 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JFR


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SPB 3737